

Appl. No. 09/752,150
Reply Filed: December 5, 2005
Reply to Office Action of: June 3, 2005

AMENDMENTS TO THE CLAIMS

Please amend claims 9-10 and 20-21, cancel claims 1-8, 11-19 and 23 as follows. This listing of claims will replace all prior versions, and listings, of claims in the application.

1-8. Cancelled.

9. (Currently Amended) A method for splicing data streams of MPEG-compressed programs, the program data being carried in MPEG transport streams of data packets having program clock references referring to an MPEG encoder system clock, the data packets carrying application data, such as video and audio data, and a header provided with control data, the method comprising:

- receiving a first input transport stream of first data packets;
- receiving a second input transport stream of second data packets to replace selected first data packets in said first stream;
- extracting for each data packet a time reference and data packet status information indicating the syntactic function of the data packet;
- establishing for each data packet a control data object storing said time reference and said data packet status information;
- establishing for ordered sets of said first data packets corresponding ordered sets of control data objects;
- establishing for said ordered sets of control data objects other control data objects storing information pertaining to different logical structures, such as frames, sequences of frames and packetized elementary stream packets;
- queuing the control data objects in different queues dependent on the data packet status or on the status of a group of data packets;
- selecting from the queues control data objects associated to data packets to be output in an output stream of data packets;
- assembling selected control data objects to a program of associated data packets of different kinds of data;

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assembling data packets associated to said selected and assembled control data objects to an output stream of data packets;

outputting said assembled stream of data packets;

~~The method for splicing programs as recited in claim 1,~~ wherein video pictures comprised in the transport streams are arranged in groups-of-pictures such that each I-picture belongs to a group-of-pictures which does not depend on any previous pictures as reference for its decoding, called a closed group-of-pictures; further comprising the step of:

generating, for an intra-coded I-picture a closed group-of-pictures property by eliminating the unwanted B-pictures that have an earlier presentation time than said I-picture.

10. (Currently Amended) A method for splicing data streams of MPEG-compressed programs, the program data being carried in MPEG transport streams of data packets having program clock references referring to an MPEG encoder system clock, the data packets carrying application data, such as video and audio data, and a header provided with control data, the method comprising:

receiving a first input transport stream of first data packets;

receiving a second input transport stream of second data packets to replace selected first data packets in said first stream;

extracting for each data packet a time reference and data packet status information indicating the syntactic function of the data packet;

establishing for each data packet a control data object storing said time reference and said data packet status information;

establishing for ordered sets of said first data packets corresponding ordered sets of control data objects;

establishing for said ordered sets of control data objects other control data objects storing information pertaining to different logical structures, such as frames, sequences of frames and packetized elementary stream packets;

queuing the control data objects in different queues dependent on the data packet status or on the status of a group of data packets;

selecting from the queues control data objects associated to data packets to be output in an output stream of data packets;

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assembling selected control data objects to a program of associated data packets of different kinds of data;

assembling data packets associated to said selected and assembled control data objects to an output stream of data packets;

outputting said assembled stream of data packets;

~~The method for splicing programs as recited in claim 1, further comprising the steps of:~~
selecting one of two candidate I-pictures at which the first input transport stream is re-entered dependent on a current program delay and the time distance from a desired switch time to a presentation time stamp of each candidate I-picture.

11-19. Cancelled

20. (Currently Amended) An apparatus for splicing data streams in MPEG-compressed programs, the program data being carried in MPEG transport streams of data packet having program clock references referring to an MPEG encoder system clock, the data packets carrying application data, such as video and audio data, and a header provided with control data, the apparatus comprising:

means for receiving a first input transport stream of first data packets;

means for receiving a second input transport stream of second data packets to replace selected first data packets in said first stream;

means for extracting for each data packet a time reference and data packet status information indicating the syntactic function of the data packet;

means for establishing for each data packet a control data object storing said time reference and said data packet status information;

means for establishing for ordered sets of said first data packets corresponding ordered sets of control data objects;

means for establishing for said ordered sets of control data objects other control data objects storing information pertaining to different logical structures of higher level than the data packets such as frames, sequences of frames and packetized elementary stream packets;

means for queuing the control data objects in different queues dependent on the data packet status or on the status of a group of data packets;

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means for selecting from the queues control objects associated to data packets to be output in an output stream of data packets;

means for assembling selected control objects to a program of associated data packets of different kinds of data;

means for assembling data packets associated to said selected and assembled control data objects to an output stream of data packets;

means for outputting said assembled stream of data packets;

~~The apparatus for splicing programs as recited in claim 12~~, wherein video pictures comprised in the transport streams are arranged in groups-of-pictures such that each I-picture belongs to a group-of-pictures which does not depend on an previous pictures as reference for is decoding, called a closed group-of-pictures;

further comprising:

means for generating for an intra-coded I-picture, a closed group-of-pictures property by eliminating the unwanted B-pictures that have an earlier presentation on time than said I-picture.

21. (Currently Amended) An apparatus for splicing data streams in MPEG-compressed programs, the program data being carried in MPEG transport streams of data packet having program clock references referring to an MPEG encoder system clock, the data packets carrying application data, such as video and audio data, and a header provided with control data, the apparatus comprising:

means for receiving a first import transports stream of first data packets;

means for receiving a second input transport stream of second data packets to replace selected first data packets in said first stream;

means for extracting for each data packet a time reference and data packet status information indicating the syntactic function of the data packet;

means for establishing for each data packet a control data object storing said time reference and said data packet status information;

means for establishing for ordered sets of said first data packets corresponding ordered sets of control data objects;

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means for establishing for said ordered sets of control data objects other control data objects storing information pertaining to different logical structures of higher level than the data packets such as frames, sequences of frames and packetized elementary stream packets;

means for queuing the control data objects in different queues dependent on the data packet status or on the status of a group of data packets;

means for selecting from the queues control objects associated to data packets to be output in an output stream of data packets;

means for assembling selected control objects to a program of associated data packets of different kinds of data;

means for assembling data packets associated to said selected and assembled control data objects to an output stream of data packets;

means for outputting said assembled stream of data packets;

~~The apparatus for splicing programs as recited in claim 12, further comprising:~~

means for selecting one of two candidate I-pictures at which the first input transport system is re-entered dependent on a current program delay and the time distance from a desired switch time to a presentation time stamp of each candidate I-picture.

22-23. Cancelled.